

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
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PCT

WRITTEN OPINION OF THE INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

(PCT Rule 66)

| | | |
|---|---|--|
| Applicant's or agent's file reference AY/MT/gk/2005.1846 | | Date of mailing (day/month/year) 16 FEB 2006 |
| International application No. PCT/SG2005/000106 | | REPLY DUE within TWO MONTHS from the above date of mailing |
| International filing date (day/month/year) 1 April 2005 | Priority date (day/month/year) 2 April 2004 | |
| International Patent Classification (IPC) or both national classification and IPC <div style="display: flex; justify-content: space-between;"> INT. CL. ON DOCKET </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> G06T 7/60 (2006.01) A61B 5/055 (2006.01) </div> | | |
| Applicant AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH et al | | |

1. ☒ The written opinion established by the International Searching Authority:

☒ is
☐ is not

considered to be a written opinion of the International Preliminary Examining Authority.
2. This **second** (second, etc.) opinion contains indications relating to the following items:

| | |
|---|--|
| <input checked="" type="checkbox"/> Box No. I | Basis of the opinion |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |
3. The applicant is hereby invited to reply to this opinion.

When? See the Reply Due date indicated above. However, the Australian Patent Office will not establish the Report before the earlier of (i) a response being filed, or (ii) one month before the Final Date by which the international preliminary examination report must be established. The Report will take into account any response (including amendments) filed before the Report is established. If no response is filed by 1 month before the Final Date, the international preliminary examination report will be established on the basis of this opinion.

Applicants wishing to have the benefit of a further opinion (if needed) before the report is established should ensure that a response is filed at least 3 months before the Final Date by which the international preliminary examination report must be established.

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4. For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis. For an informal communication with the examiner, see Rule 66.6.
4. The FINAL DATE by which the international preliminary report on patentability (Chapter II of the PCT) must be established according to Rule 69.2 is: **2 August 2006**

| | |
|---|---|
| Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6283 3929 | Authorized Officer <div style="text-align: center; margin-top: 10px;"> ROBERT BARTRAM </div> Telephone No. (02) 6283 2215 |
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WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.

PCT/SG2005/000106

Box No. 1 Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ The international application in the language in which it was filed:
- ☐ A translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3(a) and 23.1 (b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this opinion has been established on the basis of *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed.")*:

- ☒ the international application as originally filed/furnished
- ☐ the description: pages _____, as originally filed/furnished
pages _____, received by this Authority on _____ with the letter of
pages _____, received by this Authority on _____ with the letter of
- ☐ the claims: pages _____, as originally filed/furnished
pages _____, as amended (together with any statement) under Article 19,
pages _____, received by this Authority on _____ with the letter of
pages _____, received by this Authority on _____ with the letter of
- ☐ the drawings: pages _____, as originally filed/furnished
pages _____, received by this Authority on _____ with the letter of
pages _____, received by this Authority on _____ with the letter of
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

WRITTEN OPINION OF THE
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

International application No.

PCT/SG2005/000106

Box No. V Reasoned statement under Rule 66,2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|--------------------|-----|
| Novelty (N) | Claims 1-10, 14-29 | YES |
| | Claims 11-13 | NO |
| Inventive step (IS) | Claims 1-10, 14-29 | YES |
| | Claims 11-13 | NO |
| Industrial applicability (IA) | Claims 1-29 | YES |
| | Claims | NO |

2. Citations and explanations:

The following documents were cited in the International Search Report:

(a) "Automatic Extraction of the Central Symmetry (Mid-Sagittal) Plane from Neuroradiology Images" Yanxi Liu et al. The Robotics Institute, Carnegie Mellon University, Pittsburgh, PA, USA, 1996.
Retrieved on 6 May 2005, from URL:
http://www.ri.cmu.edu/pub_files/pub2/liu_yanxi_1996/liu_yanxi_1996_1.pdf

(b) "Robust Midsagittal Plane Extraction from Normal and Pathological 3-D Neuroradiology Images" Yanxi Liu et al. IEEE Transactions on Medical Imaging, Vol. 20, No. 3, March 2001, Pages 175-191.
See the whole document

(c) WO 2003/060827 A1 (KENT RIDGE DIGITAL LABS et al) 24 July 2003

(d) "Computation of the Mid-Sagittal Plane in 3-D Brain Images" S. Prima et al. IEEE Transactions on Medical Imaging, Vol. 21, No. 2, February 2002, Pages 122-138.

(e) WO 2004/034178 A2 (LABORATORIES FOR INFORMATION TECHNOLOGY et al) 22 April 2004

Novelty (N) and Inventive Step (IS):

In your response of 1 February 2006 you correctly stated that claim 11 defines the plurality of slices being generally orientated to a sagittal plane and intimated that this feature distinguishes claims 11 to 13 from the cited prior art. I direct your attention to that disclosed in document (e) above. In particular to page 9 lines 16 to 19 wherein this document clearly discloses the images from "arbitrary scanning orientations" for example (axial, coronal, or sagittal). Page 11 lines 28 to 30 clearly states that the scans are slices along X, Y, Z directions. Clearly if scans are along all of these axes at least one set of scans will be parallel to the sagittal plane. It is understood that the X direction axis is the sagittal axis. Therefore document (e) appears to explicitly disclose the use of sagittal plane scan slices as defined in your claims 11 to 13 rendering these claims as not novel and not inventive.

Note your comments regarding the remaining citations were persuasive and hence these documents are no longer raised as novelty or inventive step citations.